GENERAL CONDITIONS

The single outstanding feature of the month, considering its subsequent effect, was the prolonged period of heavy rain over the central Mississippi Basin when the streams of the region were already at or near flood stage.

These rains were the direct cause of the unprecedented flood that is slowly passing down the lower reaches of the Mississippi and overland toward the Gulf of Mexico. The approximate area of land thus far inundated is 15,000 square miles.—*A. J. H.*

CYCLONES AND ANTICYCLONES

April showed a reduction in the number of barometric maxima and minima, 18 LOWS and 8 HIGHS being tracked. Rather sluggish conditions prevailed during the middle portion of the month; beginning with the 8th there was little relative change in the positions of the principal HIGHS and LOWS during six observation periods (three days) from western Europe westward to the middle Pacific Ocean. In this case the high-pressure area assumed a north-south position over the two oceans. As the polar air slowly drained southward, and pressure began to fall over high latitudes, a somewhat more normal movement began to develop.—*W. P. Day.*

WEATHER IN THE UNITED STATES

THE WEATHER ELEMENTS

By P. C. DAY, in Charge of Division

PRESSURE AND WINDS

The marked features of the weather during April, 1927, were the persistence of moderate cyclonic conditions over the Southwest during the first two decades, and the abnormally heavy precipitation resulting therefrom as these moved to the eastward over the middle and lower Mississippi Valley, resulting in the most disastrous floods ever experienced in that river from Cairo southward and in many of its southern tributaries.

With the beginning of the month an important cyclone was central over the lower Missouri and middle Mississippi Valleys, and heavy rains had fallen during the preceding 24 hours over much of those and near-by areas. This storm lost importance rapidly and during the following 24 hours moved to the Middle Atlantic States with much decreased precipitation.

On the morning of the 4th pressure was low over the vicinity of eastern Kansas and during the following 24 hours the center moved to the Lake Superior region attended by considerable rain over the Mississippi and Ohio Valleys and Great Lakes, the rain area extending during the following day into the more eastern districts, due to the formation of a second storm that moved northward off the immediate Atlantic coast from the Carolinas to New England.

From about the 7th to 16th, inclusive, a period of 10 days, the atmospheric pressure continued low over the southern Plains and precipitation, excessive at times, was of almost daily occurrence over the immediate Mississippi Valley, particularly in Arkansas and Missouri, the eastern portions of Oklahoma, Kansas, and Nebraska, nearly the whole of Illinois, portions of Iowa, the western parts of Kentucky and Tennessee, northern Mississippi, and parts of Louisiana. The total falls on the 13th and 14th were particularly heavy over Arkansas and portions of near-by States, many stations reporting more than 5 inches in the 48-hour period and some as much as 10 inches.

After an interval of a day or so, in some sections scarcely so long, precipitation again began over much of the region mentioned above and continued with only short interruptions until the beginning of the third decade. During this period 24-hour amounts of precipitation, particularly in Arkansas, frequently exceeded 5 inches and in some cases they were above 10 inches.

After the 21st, high pressure and clear weather prevailed over the area where precipitation had persisted for so long and such cyclones as crossed the country were confined to more northerly courses, until near the end when another low-pressure area central over Missouri on the morning of the 29th moved southeasterly to the southern Appalachian region by the following morning attended by some heavy rains in the Ohio Valley and lighter amounts over near-by areas.

Despite the heavy rains in the middle and lower Mississippi Valley and some near-by areas, no cyclone giving extensive precipitation pursued a well-defined course over any considerable distance, nor were the heavy rains usually attended by important depressions of the barometer.

Anticyclones were confined mainly to the Great Lakes region and eastward to the Middle Atlantic States, New England, and the Canadian Maritime Provinces. In fact during the first half, high pressure was nearly continuous over these areas. At the beginning of the last decade anticyclonic conditions appeared over the Rocky Mountain region and, moving eastward, favored fair weather over the central valleys and southeastern districts until near the end of the month when low pressure again overspread the Central and Eastern States.

The distribution of monthly mean pressure is shown on Chart VI; departures from normal are shown on the inset on Chart I, and the change from the previous month on the inset on Chart II.

The important destructive winds of the month were mainly of the local character attending thunderstorms and usually covered but small areas at any time. They were confined as a rule to an area extending from Texas northeastward to the Great Lakes and Ohio Valley, and occurred most frequently about the 11th to 14th and again on the 18th to 21st.

A number of tornadoes occurred during the month, mostly in Texas, Arkansas, Oklahoma, and Illinois. The tornado that struck Rocksprings, Tex., on the evening of the 12th was the most severe of the month, resulting in the loss of 74 lives and damage to property exceeding $1,000,000. A storm of tornadic character passing northeastward from the vicinity of St. Louis, Mo., toward and over Springfield, Ill., and thence toward Chicago, on the afternoon of the 19th, caused the loss of 21 lives and property damage considerably in excess of $1,000,000. A list of these with others of less importance, together with the details of additional wind, hail, and other damaging storms of the month appears at the end of this section.

TEMPERATURE

The major portions of the first and second decades had moderate temperature changes with daily averages mainly above normal over the central valleys and south-